

Amendment to the Claims:

1. (Previously Presented) A method for generating magnetic resonance images using a magnetic resonance apparatus, the method comprising the steps:

- acquiring a reference scan,
- providing the magnetic resonance apparatus with a target value of a specific scan parameter, and
- determining, by the magnetic resonance apparatus and based on reference scan data, an optimum scan parameter set according to the target value of the specific scan parameter.

2. (Previously Presented) The method as claimed in claim 1, wherein the reference scan data include sensitivity data for each coil element of the magnetic resonance apparatus for each voxel.

3. (Original) The method as claimed in claim 1, wherein the optimum scan parameter set is determined for a defined region of interest.

4. (Original) The method as claimed in claim 1, wherein the specific scan parameter is the scan time.

5. (Original) The method as claimed in claim 1, wherein the specific scan parameter is the signal-to-noise ratio.

6. (Original) The method as claimed in claim 1, wherein the determining of the optimum scan parameter set comprises the step:

- determining the image noise for a number of predetermined scan parameter sets.

7. (Original) The method as claimed in claim 6, wherein the predetermined scan parameter sets include sets with different orientations of the phase encode direction.

8. (Original) The method as claimed in claim 6, wherein the predetermined scan parameter sets include sets with different RFOV.

9. (Original) The method as claimed in claim 1, comprising the further step:

- automatically performing a scan using the determined optimum scan parameter set.

10. (Previously Presented) An apparatus for generating magnetic resonance images comprising:

- an acquisition device for acquiring a reference scan,
- an operating device for providing the apparatus with a target value of a specific scan parameter, and
- a control device for determining, based on reference scan data, an optimum scan parameter set according to the target value of the specific scan parameter.

11. (Currently Amended) A computer program for generating magnetic resonance images using a magnetic resonance apparatus comprising:

- ~~computer instructions to acquire a reference scan;~~
 - ~~computer instructions to provide the magnetic resonance apparatus with a target value of a specific scan parameter;~~
 - ~~computer instructions to determine, based on reference scan data, an optimum scan parameter set according to the target value of the specific scan parameter;~~
- when the computer program is executed in a computer control a computer to perform the method as claimed in claim 1.

12. (New) A magnetic resonance imaging method comprising:

selecting a target value of a specified scan parameter criterion, the specified scan parameter criterion being one of a signal-to-noise ratio and a scan time;

analyzing a reference scan to determine which of a plurality of sets of scan parameters (1) meet the specified one of the signal-to-noise ratio scan criterion and the scan time scan criterion and (2) optimize the other of the signal-to-noise ratio scan criterion and the scan time scan criterion, namely, maximize in the case of the signal-to-noise ratio or minimize[|,|] in the case of the scan time.

13. (New) The method as claimed in claim 12, further including defining a region of interest and wherein the plurality of sets of scan parameters include both (1) subsets of scan parameters for performing intrinsic foldover imaging techniques in which foldover signals fall outside the region of interest, and (2) subsets of scan parameters for performing sensitivity encoding imaging techniques with a field of view that encompasses a size of a subject and contains the defined region of interest.

14. (New) The method as claimed in claim 13, wherein the subsets of scan parameters include scan parameter sets that describe a plurality of different phase encoding directions.

15. (New) The method as claimed in claim 12, wherein the sets of scan parameters include scan parameter sets that describe a plurality of different phase encoding directions.

16. (New) The method as claimed in claim 12, further including one of:

automatically conducting a magnetic resonance imaging scan using the determined set of scan parameters which meets the specified one of the signal-to-noise scan criterion and the scan time scan criterion and which optimizes the other one of the signal-to-noise scan criterion and the scan time scan criterion; and,

presents a display for operator selection of sets of scan parameters that meet the specified criterion and optimize the other criterion.

17. (New) A magnetic resonance imaging apparatus including a computer-based controller programmed to control the magnetic resonance imaging apparatus to perform the method as claimed in claim 12.

18. (New) A computer medium carrying software for controlling a computer to perform the method as claimed in claim 12.